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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/955,267	09/18/2001	Barry Freel	6340/16	8699

7590 11/29/2005

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EXAMINER	
NGUYEN, TAM M	

ART UNIT	PAPER NUMBER
1764	

DATE MAILED: 11/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/955,267	FREEL ET AL.	
	Examiner	Art Unit	
	Tam M. Nguyen	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 October 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 27, 2005 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 7-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Freel et al. (5,792,340) in view of Chomyn (5,858,213) or Mosby et al. (5,626,741).

Freel discloses a process for cracking a heavy hydrocarbon feedstock by contacting the feedstock with a particulate heat carrier into an upflow reactor. The feedstock is introduced into the reactor at a location above that of the particulate heat carrier. The ratio of the mass of the heat carrier to the mass of the feedstock is between 12:1 and 200:1 and the reactor is operated at a temperature of from 350 to 1000° C. The feedstock is interacted with the heat carrier at a total residence time of less than 2 seconds. The product is separated from the heat carrier and separated into a gaseous product and a liquid product. It is noted that Freel does not specifically disclose that the liquid product exhibits an increased API gravity, a reduced pour point, reduced viscosity and a reduced level of contaminants over that of the feedstock. However, The process of Freel is similar to the claimed process in terms of feedstock and operating conditions. Therefore, it would be expected that the product of Freel would have the claimed characteristics. (See col. 6, line 16 through col. 8, line 32)

Freel does not disclose a step of isolating VGO from the liquid product.

Both Chomyn and Mosby disclose a process of isolating VGO from a hydrocarbon feed. (See Chomyn's Fig.; Mosby's Fig. 3)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Freel by separating VGO from the liquid product as taught by either Chomyn or Mosby because such step is capable of separating the product into more valuable product such as distillates and VGO.

Freel does not disclose a step of recycling a heavy fraction from the product to the reactor.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Freel by recycling a heavy fraction back to the reactor because the recycling step would further crack the unconverted feedstock to increase production.

Freel does not disclose that the temperature of the second pyrolysis run is about 530 to about 700° C and the residence time of the second run is the same or longer the residence of the first run.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Freel by operating the process of Freel at the claimed temperature because when feedstock is combined with a recycled stream, the combined feedstock would be different than the original feedstock. As a result, a different operating temperature is necessary to effectively crack the combined feed and it is within the level of one of skill in the art to operate the process at an adjusted temperature of from 350° to 1000° C including the claimed temperature. Consequently, a second product would separate from the heat carrier and the second product is collected from the second product stream.

Freel does not specifically disclose that the VGO has a measured aniline point from about 110° F to about 170° F wherein the measured aniline point is lower than a calculated aniline point.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Freel/Chomyn or Freel/Mosby by producing a VGO having a measured aniline point from about 110° F to about 170° F wherein the measured aniline point is lower than a calculated aniline point as claimed because it is within the level of one of skill in the art to operate the separation step to produce a VGO having a specific aniline point as claimed because a VGO having any aniline point can be produced from the modified process of Freel including a VGO having the claimed aniline point.

Response to Arguments

The argument that Freel does not teach or suggest the desirability of isolating a VGO product from the liquid product produced by the disclosed process is not persuasive because the examiner replied upon either Chomyn or Mosby to teach a step of separating a VGO fraction from a hydrocarbon stream such as a stream from the process of Freel.

The argument that VGO produced from the process of Chomyn and Mosby is significantly different from the VGO produced from the presently claimed method is not persuasive. The examiner relied upon Chomyn and Mosby to teach that it is know to separate VGO from any hydrocarbon stream which comprises VGO. Since the modified process of Freel is essentially the same as the claimed process, it is within the level of one of skill in the art to

separate the product of Freel in the process of either Chomyn or Mosby to produce the claimed VGO.

The argument that both Mosby and Chomyn, the VGO fraction is further processed within an upflow reactor is not persuasive because one of skill in the art would omit the further processing step if VGO is a desirable product.

The argument that because the VGO produced by the method of the present invention has different properties when compared to a VGO produced by distillation is not persuasive because, as discussed above, the product stream of Freel would comprise a VGO fraction having the same properties as the VGO produced from the claimed process.

The argument that there in no teaching or suggesting in either Mosby or Chomyn that the heavy hydrocarbon feedstock is upgraded by using a particulate heater carrier within an upflow reactor is not persuasive because as discussed above, the examiner replied upon either Chomyn or Mosby to teach a step of separating a VGO fraction from a hydrocarbon stream. Freel teaches the step of upgrading a feedstock by using a particulate heater carrier within an upflow reactor as claimed.

The argument that in the present specification, it shows that the present VGO is different from VGO from other sources is not persuasive because as discussed above, the VGO is produced from the process of Freel is the same as the claimed process. Therefore, the VGO from the modified process of Freel would have the same properties as the claimed VGO.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tam M. Nguyen whose telephone number is (571) 272-1452. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tam M. Nguyen
Examiner
Art Unit 1764

TN

Tam 11/11/05